

How Do You Keep an A.I. Machine Learning Investment Strategy from Going Haywire?

In a near future depicted in *The Terminator*, a hostile artificial intelligence nukes humanity and sends skeleton-shaped machines to hunt the survivors. Both sides of this sci-fi A.I. war then travel back in time to rewrite a past that happens to be our present, waging battle in the streets of Los Angeles.

In real life, we have yet to see evidence of time travelers or a future war between A.I. and humanity. On the other hand, we haven't received any reassurance that our ongoing experiments with superpowered computers will turn out fine.

Absent a messenger from the future, those of us building with A.I. and machine learning have to engineer the guardrails ourselves and keep humans in the loop. Counterpoint's machine learning model poses no nuclear threat. Nor can it create robot assassins. It seeks to accomplish one task: identify market trends by combining variables our research team selects.

However, any investment process carries risk. Investors often ask: How do you retain control of the investment process while letting a machine help pick the investments? What stops the model from "going haywire" potentially resulting in the termination of an investor's portfolio?

Here's the answer: human input remains key to our investment process. Our research team determines what signals the machine learning follows, and adds risk-management processes that work as guardrails governing our quant investment strategies.

A.I. Basics: Don't Feed the Models Garbage

Counterpoint's machine learning investment process is very different from asking an LLM chatbot for stock picks. (And that's a good thing – **chatbots have recently been in the news** for **being poor stock pickers**.)

One key difference: Chatbots draw from an enormous dataset that is not specifically curated to help make good investment decisions. In fact, a lot of the online content they are likely to reference may also be generated by mediocre investors.

Counterpoint's portfolio managers, on the other hand, leverage their expertise in quantitative investing and behavioral finance to find input data that has been shown to accurately predict investment returns. They also use their expertise to exclude "garbage" – data that doesn't help the investment process.

The Counterpoint Machine Learning Model investment process, then, is only trained on the most reliable and highest-conviction characteristics that are predictive of future returns. The 40+ variables used in Counterpoint's models fall into broad categories – value, momentum, profitability, volatility/stability, sentiment, and long-term reversal. These classes of variables pass our research team's "sniff test" for what is actually helpful to show to machine learning models for making investment decisions.

Add a Risk Management Layer

After the machine learning model selects stocks for possible investment, Counterpoint adds another layer of risk management to the process. Certain stock characteristics, like momentum, are useful to predict returns but also come with volatility. Counterpoint runs its portfolio through another process after the machine learning's recommendation to limit exposure to certain sources of volatility, with a goal to avoid taking unnecessary risks proposed by the machine learning model.

Like Any Helpful Tool, Machine Learning Needs Human Input

Machine learning models are effective in helping make investment decisions, but only on the condition that they're fed with useful predictive variables and that the portfolio managers implementing their recommendations scrutinize portfolios to manage risk. Without this human input, the models would struggle to help an investment process. Machine learning is a great tool, but like any tool it's best when in the hands of an expert who's taking reasonable safety precautions.

A responsible machine learning investment framework should include:

- Curated model inputs
- Clearly defined investment objectives
- Post-model risk optimization
- Ongoing human oversight
- Continuous monitoring and refinement

Machine learning is not replacing experienced investment professionals—it is enhancing their capabilities. Like any sophisticated tool, its effectiveness depends on how thoughtfully it is used.

Conclusion

Ultimately A.I. and machine learning-driven investment strategies must be evaluated not only by how they perform under normal conditions, but by how they behave when the unexpected occurs. Quantitative investment strategies face edge cases—moments when a machine encounters scenarios beyond the assumptions built into its design, whether through regime shifts, breaking correlations, factor crowding, bad data contamination, overfitting, or sudden market dislocations. In each case, a machine learning system may produce outcomes that appear irrational—not because the technology has failed, but because the environment has moved beyond the conditions it was trained to understand. That reality reinforces the central principle of responsible machine learning deployment: human oversight is not a backup plan, but a permanent and essential part of the process.

Important Risk Information

Counterpoint's investment process incorporates quantitative artificial intelligence models, including machine learning techniques, which are subject to risks inherent in any data-driven approach. The effectiveness of these models depends on the accuracy, quality, relevance, and interpretation of underlying data and assumptions, and there is a risk that models may produce inaccurate assessments, become less effective due to changing market conditions, or fail to perform as expected. Rapidly evolving or unforeseen market environments may reduce the predictive value of model outputs and adversely affect investment decisions and portfolio performance. To help mitigate these risks, Counterpoint maintains rigorous research, testing, monitoring, and oversight processes designed to address potential issues such as algorithmic bias, overfitting, technical errors, and systemic model limitations. Counterpoint's investment professionals supervise machine learning outputs and continuously evaluate model effectiveness, while monitoring developments in the regulatory landscape to support compliance with applicable laws, regulations, and industry best practices. However, no assurance can be given that the models or investment strategies will be successful under all market conditions.

The Counterpoint Machine Learning Model uses machine learning technology to rank stocks of companies of any market capitalization. Machine learning is a type of artificial intelligence (“A.I.”) that finds relationships between variables and outcomes and uncovers interactions between multiple variables. The Fund’s models use over 40 variables as inputs. These variables revolve around themes of value, long-term reversal, stock price momentum, company profitability, investor sentiment toward the company, and stock price stability.

This is an informational resource only and is not investment advice. There is no guarantee that any investment strategy will achieve its objectives, generate profits or avoid losses.

Definitions

Quality - Rankings based on financial statement quality characteristics, like the Profitability anomaly.

Momentum - Rankings based on historical market returns that have predictive characteristics.

Sentiment- Rankings reflect indicators of outlook such as revisions to analyst estimates of future earnings, share issuance changes, or measures of short interest and demand in the share lending market.

Valuation - Rankings based on measures of company valuation such as price/sales ratio, and prices/earnings ratio.

Stability - Rankings based on measures of underlying company risk, such as volatility or beta.

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